Amendments to the Claims

Claims 1-18 (Cancelled)

19. **(New)** An OFDM demodulator for receiving an OFDM signal which has a plurality of OFDM symbols for transmitting data, each of the OFDM symbols being generated from a plurality of subcarriers including data carriers and pilot carriers which are assigned at constant frequency intervals, said OFDM demodulator comprising:

a Fast Fourier Transformer (FFT) operable to convert each of the OFDM symbols of the OFDM signal into the plurality of subcarriers;

a pilot carrier detector operable to detect the pilot carriers from the plurality of subcarriers of the OFDM symbol;

a phase difference calculator operable to calculate phase differences between each of the detected pilot carriers of the OFDM symbol and known pilot carriers;

a phase change amount calculator operable to calculate, based on the calculated phase differences, amounts of change of phase rotation between pairs of adjacent pilot carriers of the OFDM symbol with respect to a carrier frequency and a sampling frequency; and

a phase corrector operable to correct a phase of each of the data carriers of the OFDM symbol, based on the calculated phase differences and the amounts of change.

20. **(New)** The OFDM demodulator according to claim 19, further comprising a data demodulator operable to demodulate the data carriers after phase correction to reproduce the transmitted data.

21. **(New)** The OFDM demodulator according to claim 19, wherein the OFDM signal is inputted in a burst manner.

22. **(New)** An OFDM demodulation method for receiving an OFDM signal which has a plurality of OFDM symbols for transmitting data, each of the OFDM symbols being generated from a plurality of subcarriers including data carriers and pilot

carriers which are assigned at constant frequency intervals, said OFDM demodulation method comprising:

converting each of the OFDM symbols of the OFDM signal by Fast Fourier Transformer (FFT) to generate the plurality of subcarriers;

detecting the pilot carriers from the plurality of subcarriers of the OFDM symbol;

calculating phase differences between each of the detected pilot carriers of the OFDM symbol and known pilot carriers;

calculating, based on the calculated phase differences, amounts of change of phase rotation between pairs of adjacent pilot carriers of the OFDM symbol with respect to a carrier frequency and a sampling frequency; and

correcting a phase of each of the data carriers of the OFDM symbol, based on the calculated phase differences and the amounts of change.

23. **(New)** The OFDM demodulating method according to claim 22, further comprising demodulating the data carriers after phase correction to reproduce the transmitted data.

24. **(New)** The OFDM demodulating method according to claim 22, wherein the OFDM signal is inputted in a burst manner.

25. **(New)** An OFDM transmission system for transmitting and receiving an OFDM signal, said OFDM transmission system comprising:

an OFDM transmission apparatus; and

an OFDM receiving apparatus, wherein

said OFDM transmission apparatus comprises:

a modulator operable to assign pilot carriers and data carriers to a plurality of subcarriers on a symbol-by-symbol basis, the pilot carriers being assigned to subcarriers at constant frequency intervals, and modulate the data carriers with transmitting data to produce modulated subcarriers;

an inverse Fast Fourier Transformer operable to convert the plurality of subcarriers from said modulator into an OFDM symbol; and

a transmitter operable to transmit a plurality of OFDM symbols as an OFDM signal, and

said OFDM receiving apparatus comprises:

a Fast Fourier Transformer (FFT) operable to convert each of the OFDM symbols of a received OFDM signal into a plurality of subcarriers;

a pilot carrier detector operable to detect the pilot carriers from the plurality of subcarriers of the OFDM symbol;

a phase difference calculator operable to calculate phase differences between each of the detected pilot carriers of the OFDM symbol and known pilot carriers;

a phase change amount calculator operable to calculate, based on the calculated phase differences, amounts of change of phase rotation between pairs of adjacent pilot carriers of the OFDM symbol with respect to a carrier frequency and a sampling frequency; and

a phase corrector operable to correct a phase of each of the data carriers of the OFDM symbol, based on the calculated phase differences and the amounts of change.

26. **(New)** An OFDM demodulator for receiving an OFDM signal which has a plurality of OFDM symbols for transmitting data, each of the OFDM symbols being generated from a plurality of subcarriers including data carriers and pilot carriers which are assigned at constant frequency intervals, said OFDM demodulator comprising:

a separator operable to separate each of the OFDM symbols of the OFDM signal into the plurality of subcarriers;

a pilot carrier detector operable to detect the pilot carriers from the plurality of subcarriers of the OFDM symbol;

a phase difference calculator operable to calculate phase differences between each of the detected pilot carriers of the OFDM symbol and known pilot carriers;

a phase change amount calculator operable to calculate, based on the calculated phase differences, amounts of change of phase rotation between pairs of adjacent pilot carriers of the OFDM symbol with respect to a carrier frequency and a sampling frequency; and

a phase corrector operable to correct a phase of each of the data carriers of the OFDM symbol, based on the calculated phase differences and the amounts of change.

27. **(New)** The OFDM demodulator according to claim 26, further comprising a data demodulator operable to demodulate the data carriers after phase correction to reproduce the transmitted data.

28. **(New)** The OFDM demodulator according to claim 26, wherein the OFDM signal is inputted in a burst manner.

29. **(New)** An OFDM demodulation method for receiving an OFDM signal which has a plurality of OFDM symbols, each of the OFDM symbols being generated from a plurality of subcarriers including data carriers and pilot carriers which are assigned at constant frequency intervals, said OFDM demodulation method comprising:

separating each of the OFDM symbols of the OFDM signal into the plurality of subcarriers;

detecting the pilot carriers from the plurality of subcarriers of the OFDM symbol;

calculating phase differences between each of the detected pilot carriers of the OFDM symbol and known pilot carriers;

calculating, based on the calculated phase differences, amounts of change of phase rotation between pairs of adjacent pilot carriers of the OFDM symbol with respect to a carrier frequency and a sampling frequency; and

correcting a phase of each of the data carriers of the OFDM symbol, based on the calculated phase differences and the amounts of change.

30. **(New)** The OFDM demodulating method according to claim 29, further comprising demodulating the data carriers after phase correction to reproduce the transmitted data.

31. **(New)** The OFDM demodulating method according to claim 26, wherein the OFDM signal is inputted in a burst manner.

32. **(New)** An OFDM demodulator for receiving an OFDM signal which has a plurality of OFDM symbols for transmitting data, each of the OFDM symbols being generated from a plurality of subcarriers including data carriers and pilot carriers which are assigned at constant frequency intervals, said OFDM demodulator comprising:

a Fast Fourier Transformer (FFT) operable to convert each of the OFDM symbols of the OFDM signal into the plurality of subcarriers;

a pilot carrier detector operable to detect the pilot carriers from the plurality of subcarriers of the OFDM symbol;

a phase calculator operable to calculate a phase for each of the pilot carriers of the OFDM symbol;

a phase change amount calculator operable to calculate, based on the calculated phases, amounts of change of phase rotation between pairs of adjacent pilot carriers of the OFDM symbol with respect to a carrier frequency and a sampling frequency; and

a phase corrector operable to correct a phase of each of the data carriers of the OFDM symbol based on the amounts of phase change.

33. **(New)** The OFDM demodulator according to claim 32, further comprising a differential demodulator operable to subject the data carriers after phase correction to differential demodulation to reproduce the transmitted data.

34. **(New)** The OFDM demodulator according to claim 32, wherein the OFDM signal is inputted in a burst manner.

35. **(New)** An OFDM demodulation method for receiving an OFDM signal which has a plurality of OFDM symbols for transmitting data, each of the OFDM symbols being generated from a plurality of subcarriers including data carriers and pilot carriers which are assigned at constant frequency intervals, said OFDM demodulation method comprising:

converting each of the OFDM symbols of the OFDM signal by Fast Fourier Transformer (FFT) to generate the plurality of subcarriers;

detecting the pilot carriers from the plurality of subcarriers of the OFDM symbol;

calculating a phase for each of the pilot carriers of the OFDM symbol;

calculating, based on the calculated phases, amounts of change of phase rotation between pairs of adjacent pilot carriers of the OFDM symbol with respect to a carrier frequency and a sampling frequency; and

correcting a phase of each of the data carriers of the OFDM symbol, based on the amounts of change.

36. **(New)** The OFDM demodulating method according to claim 35, further comprising subjecting the data carriers after phase correction to differential demodulation to reproduce the transmitted data.

37. **(New)** The OFDM demodulating method according to claim 35, wherein the OFDM signal is inputted in a burst manner.

38. **(New)** An OFDM transmission system for transmitting and receiving an OFDM signal, said OFDM transmission system comprising:

an OFDM transmission apparatus; and

an OFDM receiving apparatus, wherein

said OFDM transmission apparatus comprises:

a modulator operable to assign pilot carriers and data carriers to a plurality of subcarriers on a symbol-by-symbol basis, the pilot carriers being assigned to subcarriers at constant frequency intervals, and subject the data carriers to differential modulation with transmitted data to produce modulated subcarriers;

an inverse Fast Fourier Transformer operable to convert the plurality of subcarriers from said modulator into an OFDM symbol; and

a transmitter operable to transmit a plurality of OFDM symbols as an OFDM signal, and

said OFDM receiving apparatus comprises:

a Fast Fourier Transformer (FFT) operable to convert each of the OFDM symbols of a received OFDM signal into a FFT converted signal;

a pilot carrier detector operable to detect the pilot carriers from the FFT converted signal of the OFDM symbol;

a phase calculator operable to calculate a phase for each of the pilot carriers of the OFDM symbol;

a phase change amount calculator operable to calculate, based on the calculated phases, an amount of phase change between each pair of adjacent pilot carriers of the OFDM symbol with respect to a sampling frequency;

a phase corrector operable to correct a phase of each of the data carriers of the OFDM symbol based on the amounts of phase change; and

a differential demodulator operable to subject the data carriers after phase correction to differential demodulation to reproduce the transmitted data.

39. **(New)** An OFDM demodulator for receiving an OFDM signal which has a plurality of OFDM symbols for transmitting data, each of the OFDM symbols being generated from a plurality of subcarriers including data carriers and pilot carriers which are assigned at constant frequency intervals, said OFDM demodulator comprising:

a separator operable to separate each of the OFDM symbols of the OFDM signal into the plurality of subcarriers;

a pilot carrier detector operable to detect the pilot carriers from the plurality of subcarriers of the OFDM symbol;

a phase calculator operable to calculate a phase for each of the pilot carriers of the OFDM symbol;

a phase change amount calculator operable to calculate, based on the calculated phases, an amount of phase change between each pair of adjacent pilot carriers of the OFDM symbol with respect to a sampling frequency; and

a phase corrector operable to correct a phase of each of the data carriers of the OFDM symbol based on the amounts of phase change.

40. **(New)** The OFDM demodulator according to claim 39, further comprising a data demodulator operable to subject the data carriers after phase correction to differential demodulation to reproduce the transmitted data.

41. **(New)** The OFDM demodulator according to claim 39, wherein the OFDM signal is inputted in a burst manner.

42. **(New)** An OFDM demodulation method for receiving an OFDM signal which has a plurality of OFDM symbols for transmitting data, each of the OFDM symbols being generated from a plurality of subcarriers including data carriers and pilot carriers which are assigned at constant frequency intervals, said OFDM demodulation method comprising:

separating each of the OFDM symbols of the OFDM signal into the plurality of subcarriers;

detecting the pilot carriers from the plurality of subcarriers of the OFDM symbol;

calculating a phase for each of the pilot carriers of the OFDM symbol;

calculating, based on the calculated phases, an amount of change between each pair of adjacent pilot carriers of the OFDM symbol with respect to a sampling frequency; and

correcting a phase of each of the data carriers of the OFDM symbol based on the amounts of phase change.

43. **(New)** The OFDM demodulating method according to claim 42, further comprising subjecting the data carriers after phase correction to differential demodulation to reproduce the transmitted data.

44. **(New)** The OFDM demodulating method according to claim 42, wherein the OFDM signal is inputted in a burst manner.